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Enclosed are:

Patent Specification and Declaration

5 sheets of drawing(s)

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Total Claims	19 - 20		x 18 =	
Independent Claims	2 - 3		x 78 =	
MULTIPLE DEPENDENT CLAIM PRESENTED			260 =	
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IMPROVED DISPLAY OF MESSAGES

BACKGROUND OF THE INVENTION

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Field of Invention

The present invention relates to an improved display aimed at assisting a user in the prioritisation of effort applied to reading and responding to messages.

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Description of the Related Art

Email systems generally provide the user with a number of core directories, or folders, which usually comprise: an inbox to which all new messages are added; an outbox containing those messages which have been sent; and a deleted or trash folder containing recently deleted messages - once an update, such as a replication with a server, has been requested this folder is usually emptied.

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In addition to these folders, users are usually provided with the ability to create hierarchies of new folders, for example one for each of their different work activities, and store emails in those folders and sub-folders. Traditionally, the user is provided with the ability to view summary information for a list of the email messages in a folder. The summary information includes: the originator of the message; the subject heading; and the date and time of receipt.

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In addition to this information, some email systems, such as Lotus Notes, enable the user to allocate categories to a message such as: urgent; for your information; or company confidential. These additional categories are also shown when viewing the summary information for email messages in each folder. For example, Lotus Notes displays those messages flagged as urgent with a red exclamation mark alongside them.

A challenge being faced by the many email recipients, particularly in the commercial sector, is that the volume of email received is increasing. In some extreme cases email recipients may receive in excess of a hundred messages a day relating to any one of their ongoing work activities. Some email systems are providing agent based capabilities which automatically filter email to reduce the volume of apparently unactioned messages.

Nonetheless, in deciding how to deal with messages, recipients face the following problems: it is difficult to prioritise the actioning of messages. This is because reading email is time consuming, especially when very large numbers of messages are received, and simply scanning the directory lists represents an ineffective approach to prioritisation. For example, unimportant messages are occasionally flagged as urgent whilst very important messages may be received from an unknown sender with no subject listed; the current email display mechanisms, in particular those which use folders and lists of message, do

not necessarily represent the recipient's priorities; not all email requires immediate action and in some cases a recipient may wish to take time to consider a response. In such case the email must either be filed or it gradually drifts down the email display. In either case it is possible to forget a response; messages are occasionally filed incorrectly and are then overlooked in subsequent reviews; and email psychology tends to focus individuals on maintaining a tidy inbox as opposed to an effective prioritisation of work activity.

It is an object of the present invention to provide an improved display aimed at assisting users in prioritisation of work through the use of message priority definition and graphical display of prioritised messages.

Accordingly, the invention provides a method for generating a prioritized view of a plurality of messages, comprising the steps of: defining one or more concepts against which a message can be prioritized, the or each concept comprising one or more conditions against which a message can be tested; for each message, generating a fit to a selected one or more of said concepts, said fit corresponding to whether or not said message fulfils said conditions; and creating a display representative of the respective fits of said messages to said one or more selected concepts.

While the problems addressed by the invention are described in terms of email messages, it will be seen that the invention can be applied to the prioritisation of work associated with messages of any type.

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Nonetheless, in relation to email systems, a discussion thread is the term used for the group of messages resulting from users replying to messages received from another user. Some email systems provide functionality enabling the user to view the summary information of messages grouped in discussion threads. In a preferred embodiment of the present invention, the messages are grouped into discussion threads before being displayed according to the invention.

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BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will now be described with reference to the accompanying drawings, in which:

Figure 1 is a block diagram of an email system;

Figure 2 is a flow diagram of a portion of a script for graphical display of prioritised messages;

Figure 3 shows a priority definition dialog box;

Figure 4 shows messages displayed with a variation in colour; and

Figure 5 shows messages displayed with a variation in size.

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DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Figure 1, where a preferred embodiment of the invention based on a Lotus Notes mailbox is described. The Lotus Notes mail box is one of many applications capable of running on Lotus Notes. In Lotus Notes, the mailbox is a database in which each message is an object having a plurality of attributes, for example, "Body" includes the text of a message and "Subject" includes the subject line. While other email applications may not be strictly based on a database core, messages can nonetheless be thought of as individual objects having identifiable attributes, such as To, From, Subject, Body and Date.

In common with other Lotus applications and also Microsoft applications, a scripting language is provided within the Notes environment, enabling an application developer to either develop applications from scratch or to customise existing applications such as the mailbox.

In Lotus Notes, the scripting language, LotusScript, is used. Nonetheless it can be seen that the invention can be deployed within any email product using for example Visual Basic macros for Microsoft Exchange. Alternatively, the invention may be implemented as an integral part of any email product, using the API of the product.

In the preferred embodiment, two scripts are provided:

5 a criteria generating script which enables a user to interactively enter a prioritisation definition; and a display script which accesses email messages, divides the messages into groups, parses the messages, applies the prioritisation definitions to the results of the email parsing and displays those results graphically for subsequent retrieval by the user.

10 In a preferred embodiment of the invention, the user may either be viewing one of the core folders, for example, the inbox, or one of a number of user defined folders. A button or icon is provided enabling the user to select a prioritized view generated according to the invention.

15 In the preferred embodiment, the display script responds to the button or icon being selected, to first group messages appearing in the currently viewed folder into discussion threads.

20 In Lotus Notes, every message has a unique identifier. A message which is a response to an outgoing message includes a \$REF attribute which stores the unique identifier of the outgoing message. More than one response to an outgoing message may be stored in an in-box and responses may in turn be replied to leading to hierarchical groups of 25 messages in a discussion thread.

With reference to Figure 2, the display script groups messages by looping through all messages in the folder

currently being viewed. The script initially determines if a message is an original message or a response, step 20. If the message is a response, (even if it had been an originator for another message), the script checks for the 5 originating message by searching in the currently viewed folder for a message having the identity stored in the \$REF attribute, step 22. A table 24 is then used to determine the next course of action. In the table, N/A means that either the current message is an original, so there is no 10 originating message, or if the current message is a response, the originating message was not found.

If the current message is an original or if there is no message in the folder with an identity matching the \$REF attribute, a new group is allocated and the current message added to the group, steps 26 and 32. If the originating message is found and neither message is in a group, the response message and the original message are added to a new group, steps 28 to 32. If the originating message is found and is already in a group and the current message is not in a group, the current message is added to this group, step 32. If the current message is in a group and the originating message is not in a group, then the originating message is added to the group, step 34. If both the current and 25 originating messages are in groups, then the groups, if different, are merged, step 36. Finally, if the current message is grouped and an originating message is not available, nothing needs to be done.

It will be seen that messages may in fact be related although they may not be in such rigidly defined discussion threads, and this may result in an unnecessarily large number of groups being generated.

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It is therefore preferable that groups containing more than one message, discussion thread groups, should be used as seed groups with which groups containing fewer messages might possibly be merged, single message groups.

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A number of criteria can be used to merge groups. Groups can be merged if, for example:

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25 a substantial portion of the subject line of a single message group appears in any message of a discussion thread group; or

the sender or recipient (according to whether the message was received or sent by the mailbox owner) of a message in a single message group matches one or more names in the From or To lines in any message of a discussion thread group.

25 In any case, it is preferable to provide a "No Category" group for messages that remain in single message groups. At a later stage the user may manually transfer messages from the "No Category" group to any of the other groups or create a new group.

Groups can be simply given numerical names such as "Discussion Thread #n", or the display script can use some analysis of the subject lines or senders/recipients of messages within a group to determine a meaningful name. For example, if the same or mostly the same subject line is used in most messages in a group, this can provide the name of the group; or the messages are all received or sent to one other person, that person's name can be used.

Groups can be further merged if, for example, groups of keywords are either manually associated with a group by a user or if they are automatically extracted from the respective Bodies of messages in a group. Thus, if the same keyword is associated with more than one group, those groups can be merged.

This leads to an alterative manner of grouping messages which can be particularly useful where the user is looking at messages that are stored in hierarchical folders. In this case, the display script simply groups messages according to the folder in which they are stored, or if the user is looking at messages in a folder, messages can be grouped according to sub-folder. It should be seen that in this case, the folder names also provide readily meaningful names for the groups.

Once messages are grouped, the display script now assesses each message against a pre-defined prioritisation concept.

Figure 3 presents a schematic of a dialog box presented by the criteria generating script. The box enables a user to interact and define a series of concepts which are used to prioritize messages - clearly this needs to have been done, either by a user or supervisor - remotely or locally, before the user can meaningfully run the display script.

Nonetheless, in a typical interaction, the user right clicks with a mouse button on the Concept Name box and is presented with a pop-up menu allowing for addition, deletion, renaming etc. of a concept. For each concept, the user is able to specify one or more scenarios which determine the applicability of message to a concept.

In the present embodiment, the user can specify a number of conditions for a given scenario:

the name of the sender - enabling a recipient to rank the importance of individual email authors. The name could be specified as either an individual or a member of a certain group in an address book - assuming one is associated with the email application.

the occurrence of key phrases - in its simplest form this could include a client's name or a subject. A more complex mapping could include searches for words or phrases which represent more subtle concepts such as an argument between two team members. Examples of such phrases are, "strongly disagree" or "inappropriate action".

the number of emails exchanged - indicating the intensity of activity in a particular group. It will be seen that in the message grouping phase described above, the system determines how many messages are associated with a given discussion thread. It is therefore useful, even if discussion threads have subsequently been merged into a single group, to keep track of the number of messages in the discussion thread to which a message belongs. A discussion thread containing a large number of messages may indicate a "hot" topic even within a group containing a large number of other messages.

the time since the last message in the group - indicating that a response is awaited from the user to an incoming message or from a member of the group to which the user sent a message. Again the message grouping phase can be adapted to provide for this condition, by noting the last message in a discussion thread hierarchy. A further check on the last person to contribute to the discussion thread and the specified recipients would enable some inference regarding the source of the delay.

For the example in Figure 3, the recipient has specified the three concepts: "Priority Project" (for example a project approaching acceptance), "Crisis Sale" (for example an opportunity where the Client is upset with the company) and "Dispute" (for example an argument within a group). For each of these concepts the recipient is able to

define one or more scenarios where each scenario comprises a number of conditions.

5 In the case of Figure 3, one of the scenarios representing the concept of a "Crisis Sale" has been defined using a combination of the 4 available conditions:

10 the Originator of the email is either a member of the sales team or a client. Membership of groups can be determined through comparison with the Users Address book which provides the facility to define address groups.

15 Alternatively the user could specify an actual email address.

20 the Body of the email includes the words "Upset" and "Endanger". For example, this condition would be met if the Body of the email included the phrase, "at our last meeting the Client was very upset and stated that this development would endanger our future relationship".

25 the number of emails field has been left blank. In this scenario the number of emails in the discussion thread is not considered significant as a single email can represent a business critical issue. In a scenario representing a "Dispute" the number of emails exchanged could be considered significant.

the last email exchange field has been set as greater than 1 day. In this scenario this indicates that a potential

problem (Sales Crisis) has been identified, however no response has been forthcoming.

The display script applies a simple, weighted voting scheme to calculate a fit to the conditions specified by the email recipient. The best fit corresponds to the highest priority mail and is represented using the Display Parameter which is also specified by the recipient in the priority definition dialogue box.

Thus, in the example of Figure 3, where the user intends prioritizing the display of messages according to the concept of "Crisis Sale", the display script compares each message against each of the three scenarios for the concept. In the present embodiment, the best fit from the three scenarios is taken as the final fit. Alternatively, the fit from the three scenarios could be aggregated to give the final fit.

The final step in defining a concept is to select a display parameter. In the present embodiment, the parameter can be either one of a number of colours, for example, red, green or blue; or size. It should be noted that the display parameter is the same for each scenario in a concept and as such the display parameter dialog box can alternatively be displayed in a separate window associated with the concept name rather than with the scenario conditions.

Use of a selectable display parameter enables a user to prioritize mail against more than one concept at a time or simply to select the display parameter for a single concept which they comprehend most readily.

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Figure 4 presents a schematic of a window produced by the display script where messages are divided into groups "No Category" and "Discussion 1...9" and displayed in cells extending from their associated group in date order from the newest on the left to the oldest on the right. In Figure 4, mail is only prioritized against one concept, and it is the redness of the email cells (shown as shades of grey) which varies to reflect the fit to the concept definitions. In Figure 5, it is the length of the cells which changes according to the fit.

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If, however, the user wishes to prioritize against more than one concept, then one concept can be associated with size as a display parameter and another can be associated with a colour as a display parameter. This means that messages closely fitting more than one concept will be associated with large and red cells, and those of little significance will be associated with small and, say, pale pink cells.

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Where the user wishes to prioritize against more than two concepts then a number of possibilities may be employed. It will be seen that where four boolean conditions are used, as in Figure 3, a fit will have 16 different possible

values. The system can set a threshold, say 13, above which a message becomes a fit, and below which it is not considered significant. The user can then associate at least two of the concepts with colours, however, it will be seen that only one concept at a time can usefully be associated with size. When a message is tested against a colour associated concept, the cell for that message is only displayed in that colour if it exceeds the threshold. Where a message exceeds the threshold for two or more concepts, then the colour associated with the concept to which the message fits best is used for the cell. If the message fits two concepts equally, then the message's cell can be displayed in a mixed, hashed or flashing or other highlighted mode or simply one colour or the other may be chosen at random. Thus, the display will show cells possibly of varying sizes and possibly with cells of differing colours.

In any case, it will be seen that the prioritized view can be displayed instead of, or complementary to, the conventional summary information list.

In the preferred embodiment, the prioritized view is interactive. In Lotus Notes, the message's unique identifier can be associated with its corresponding displayed cell. When the user clicks on the cell associated with a message, then an API call is made to display the message in a conventional manner, allowing the user to read and/or reply to the message.

Possible enhancements to the display include:

the addition of functionality to capture the users feelings about the scale of a concept's applicability and the application of Artificial Intelligence algorithms to develop more sophisticated criteria. This is analogous to the use of AI to understand a user's needs in searching the Internet and would make use of similar technology;

the addition of functionality to enable a manager to impose concept priorities. For example, a manager could state that all emails which referred to client relationships were of a higher priority than internal correspondence; and

the use of system monitoring techniques to reflect the level of effort expended by an individual on each group.

It will be seen that the present invention can be applied to the process of prioritizing views of differing types of messages, not necessarily email messages by simply applying the steps of defining one or more concepts against which a message can be prioritized, generating a fit of a message to one or more of such concepts and creating a display representative of the fit of such messages to the concepts. For example, the invention can be applied to viewing messages in queues.

What is claimed is:

1. 1. A method for generating a prioritized view of a
2 plurality of messages, comprising the steps of:

3 defining one or more concepts against which a message
4 can be prioritized, the or each concept comprising one or
5 more conditions against which a message can be tested;

6 for each message, generating a fit to a selected one or
7 more of said concepts, said fit corresponding to whether or
8 not said message fulfils said conditions; and

9 creating a display representative of the respective
10 fits of said messages to said one or more selected concepts.

1. 2. A method as claimed in claim 1 wherein said display
2 creating step comprises displaying respective cells
3 associated with messages in one or more rows or columns.

1. 3. A method as claimed in claim 2 wherein said concept
2 defining step comprises associating a concept with a display
3 parameter comprising one of a colour or size.

1. 4. A method as claimed in claim 3 wherein said display
2 creating step is responsive to a user selecting a
3 prioritized view according to a concept associated with a
4 colour, to display said cells in an intensity of said colour
5 proportional to the fit of their associated message to said
6 concept.

1 5. A method as claimed in claim 3 wherein said display
2 creating step is responsive to a user selecting a
3 prioritized view according to a concept associated with
4 size, to display said cells with a length proportional to
5 the fit of their associated message to said concept.

1 6. A method as claimed in claim 3 wherein said display
2 creating step is responsive to a user selecting a
3 prioritized view according to a first concept associated
4 with a colour and a second concept associated with size, to
5 display said cells in an intensity of said colour
6 proportional to the fit of their associated message to said
7 first concept and with a length proportional to the fit of
8 their associated message to said second concept.

1 7. A method as claimed in claim 3 wherein said display
2 creating step is responsive to a user selecting a
3 prioritized view according to first and second concepts,
4 each associated with a respective colour, to display said
5 cells in a colour according to the best fit of their
6 associated message to one of said first and second concepts.

1 8. A method as claimed in claim 7, wherein said display
2 creating step is responsive to a user selecting a
3 prioritized view according to a third concept associated
4 with size, to display said cells with a length proportional
5 to the fit of their associated message to said third
6 concept.

1 9. A method as claimed in claim 2 comprising the step of:
2 grouping messages into a plurality of groups, and
3 wherein said display creating step comprises displaying
4 respective cells associated with messages in a row or column
5 extending from their associated groups.

1 10. A method as claimed in claim 9 wherein said grouping
2 step comprises grouping said messages in discussion threads.

1 11. A method as claimed in claim 9 wherein said grouping
2 step comprises grouping said messages according to their
3 subject matter.

1 12. A method as claimed in claim 9 wherein said messages
2 are grouped by said user into a plurality of folders.

1 13. A method as claimed in claim 9 wherein messages groups
2 containing less than a predetermined number of messages are
3 merged into a "No Category" group.

1 14. A method as claimed in claim 1 wherein said messages
2 are email messages.

1 15. A method as claimed in claim 1 wherein each concept
2 comprises one or more scenarios, the or each scenario
3 comprising one or more of said conditions, and wherein said
4 fit generating step comprises testing each message against
5 the or each condition in the or each scenario for a user
6 selected concept to generate a fit for the or each scenario.

1 16. A method as claimed in claim 15 wherein said fit for
2 said concept is the highest of said fits for the or each
3 scenario.

1 17. A method as claimed in claim 15 wherein said fit for
2 said concept is the aggregate of said fits for the or each
3 scenario.

1 18. A message viewer for generating a prioritized view of a
2 plurality of messages, comprising:

3 means for defining one or more concepts against which a
4 message can be prioritized, the or each concept comprising
5 one or more conditions against which a message can be
6 tested;

7 means, operable on each message, for generating a fit
8 to a selected one or more of said concepts, said fit
9 corresponding to whether or not said message fulfils said
10 conditions; and

11 means for creating a display representative of the
12 respective fits of said messages to said one or more
13 selected concepts.

1 19. A computer program product comprising computer program
2 code stored on a computer readable storage medium for, when
3 executed on a computing device, generating a prioritized
4 view of a plurality of messages, the program code comprising
5 means for performing the steps of claim 1.

ABSTRACT OF THE DISCLOSURE

A message viewer for generating a prioritized view of a plurality of messages stored in an email mailbox is disclosed. The viewer includes a script for defining one or more concepts against which a message can be prioritized, the or each concept comprising one or more conditions against which a message can be tested. A display script operates on each message, to generate a fit to a selected one or more of the concepts, the fit corresponding to whether or not the message fulfils the conditions. Once complete, the display script creates a display representative of the respective fits of the messages to the one or more selected concepts.

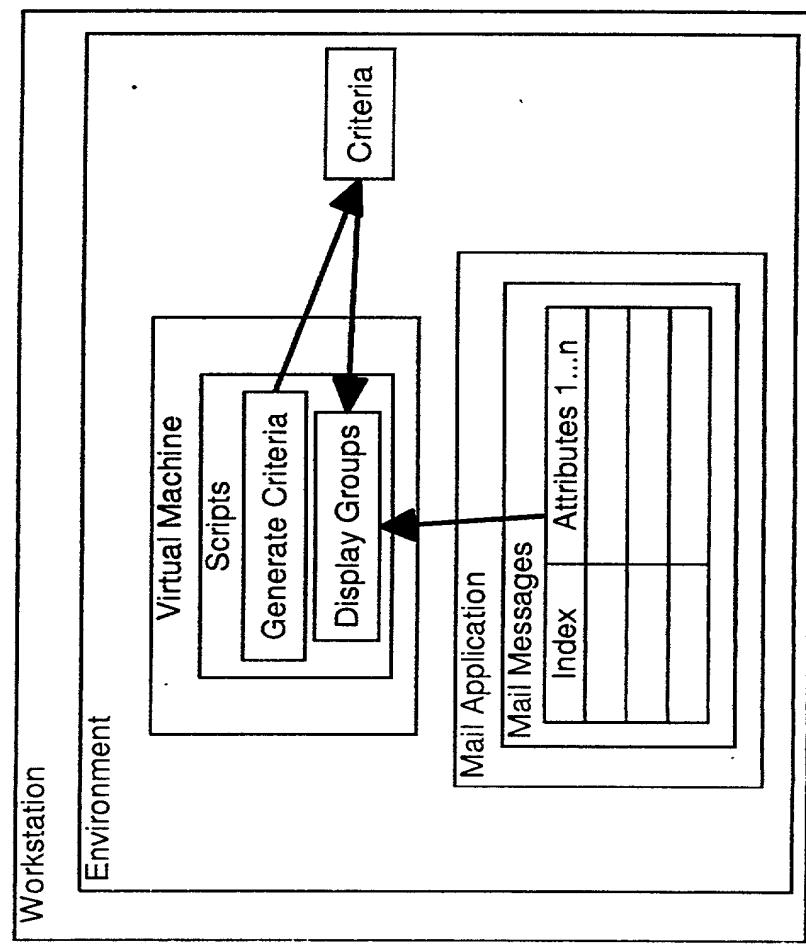


Figure 1

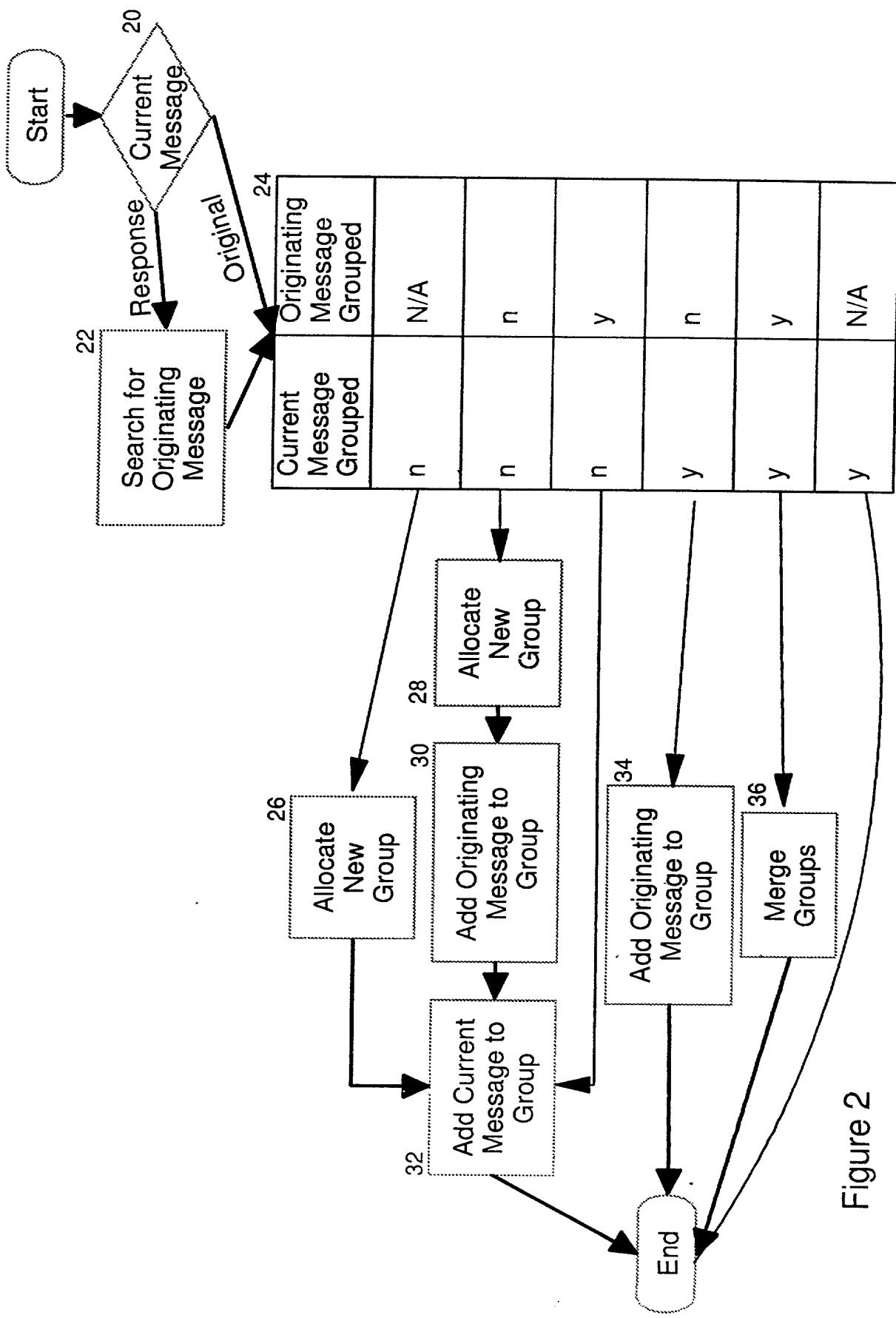


Figure 2

Priority Definition Dialogue	Concept Name	Scenarios	Originator
	Priority Project	Scenario 1	Salesteam OR Client
	Crisis Sale	Scenario 2	Phrase
	Dispute	Scenario 3	Upset AND Endanger
			Number Of Emails
			Last Exchange
			>1 day
			Display Parameter
			Red

Figure 3

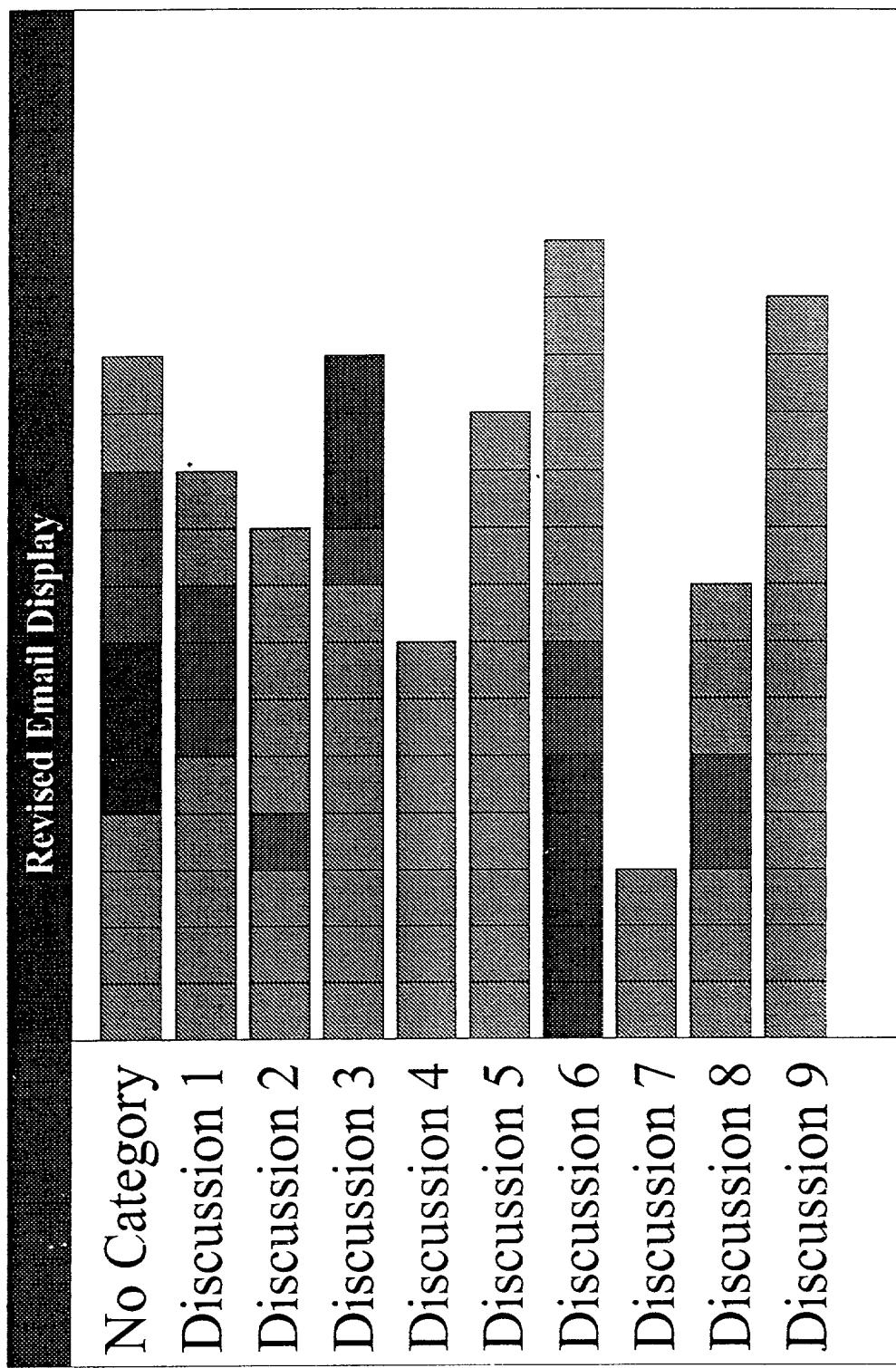


Figure 4

No Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	10010	10011	10012	10013	10014	10015	10016	10017	10018	10019	10020	10021	10022	10023	10024	10025	10026	10027	10028	10029	10030	10031	10032	10033	10034	10035	10036	10037	10038	10039	10040	10041	10042	10043	10044	10045	10046	10047	10048	10049	10050	10051	10052	10053	10054	10055	10056	10057	10058	10059	10060	10061	10062	10063	10064	10065	10066	10067	10068	10069	10070	10071	10072	10073	10074	10075	10076	10077	10078	10079	10080	10081	10082	10083	10084	10085	10086	10087	10088	10089	10090	10091	10092	10093	10094	10095	10096	10097	10098	10099	100100	100101	100102	100103	100104	100105	100106	100107	100108	100109	100110	100111	100112	100113	100114	100115	100116	100117	100118	100119	100120	100121	100122	100123	100124	100125	100126	100127	100128	100129	100130	100131	100132	100133	100134	100135	100136	100137	100138	100139	100140	100141	100142	100143	100144	100145	100146	100147	100148	100149	100150	100151	100152	100153	100154	100155	100156	100157	100158	100159	100160	100161	100162	100163	100164	100165	100166	100167	100168	100169	100170	100171	100172	10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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: James S. Luke

Serial No.: Group No.:

Filed: 12/2/99

For: Improved Display of Messages

Assistant Commissioner of Patents
Washington, D.C. 20231

jc511 U.S. PRO
09/453127
12/02/99

EXPRESS MAIL CERTIFICATE

"Express Mail" label number: EJ922479795US

Date of Deposit: December 2, 1999

WE REQUEST THE DATE OF DEPOSIT AS THE DATE FILED.

I hereby certify that the following **attached** correspondence comprising:

1. Transmittal for Patent Application (in duplicate)
2. Declaration and Power of Attorney
3. Recordation and Assignment
4. Patent Application (17 pages)
5. Formal Drawings (Five Sheets)
6. Certified copy of UK application, S.N. 9919990.3.
7. Business Reply Post Card

is being deposited with the United States Postal Service Express Mail Post Office to Addressee service under CFR 1.10 on the date indicated above and is addressed to:

**Assistant Commissioner of Patents
Washington, D.C. 20231**

Catherine M. Robbins
(Name of person mailing paper or fee)

Catherine M. Robbins
(Signature of person mailing paper or fee)

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

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the specification of which (check one)

is attached hereto.

was filed on
as Application Serial No.
and was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, CFR 1.56.

I hereby claim foreign priority benefits under Title 35, USC 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

9919990.3	United Kingdom	25/08/99	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number	Country	Filing Date	Priority Claimed
		Day/Month/Year	

I hereby claim the benefit under Title 35, USC 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, USC 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, CFR 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S. Applications:

Serial No.	Filing Date	Status
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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INVENTOR'S SIGNATURE:



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